

What is claimed is:

1. A method comprising

creating a data structure to store progress information on one or more concurrent operations to access a file system of a non-volatile memory; and

5 executing the one or more concurrent operations based on the progress info.

2. The method of claim 1 further comprising

initializing the progress information to include one or more locations of a non-fragment unit of the file system being operated in each concurrent operations.

3. The method of claim 1 further comprising

10 retrieving the progress information to obtain one or more locations of a non-fragment unit of the file system associated with each concurrent operation.

4. The method of claim 1 further comprising

operating on a fragment of the file system as indicated by the progress information according to each concurrent operation.

15 5. The method of claim 1 further comprising

updating the progress information associated with a concurrent operation, in response to the completion of the concurrent operation on a fragment of the file system.

6. The method of claim 5 further comprising

20 from the progress information associated with the concurrent operation, deleting one or more locations of a non-fragment unit of the file system associated with the fragment.

7. The method of claim 1, further comprising

continuing each concurrent operation on one or more fragments of the file system, in response to determining that the progress information associated with the concurrent operation comprises one or more locations of a non-fragment unit of the file system associated with the one or more fragments.

5 8. The method of claim 1 further comprising

removing the progress information for each concurrent operation, in response to determining that the concurrent operation on the file system is completed.

9. The method of claim 1 further comprising

10 in response to determining that one concurrent operation moves one or more locations of a non-fragment unit of the file system to one or more new locations, updating the progress information relating to the one or more locations with the one or more new locations.

10. The method of claim 1, further comprising

15 in response to determining that a write operation replaces one or more sequence tables of the file system by one or more new sequence tables, updating the progress information on the one or more sequence tables with progress information on the one or more new sequence tables.

11. The method of claim 1, further comprising

20 detecting whether there are one or more high priority operations in the one or more concurrent operations, during executing each concurrent operation on a fragment of the file system as identified by the progress info.

12. The method of claim 11, further comprising

in response to detecting one or more high priority operations, performing the one or more high priority operations after completing the concurrent operations on the fragment.

13. A system comprising

5 a non-volatile memory,
 a volatile memory, and
 a processor to store in the volatile memory a data structure that comprises location data associated with one or more concurrent operations to access a file system of the non-volatile memory, and to perform the one or more concurrent
10 operations according to the location data.

14. The system of claim 13, wherein the processor further to initialize the location data to include location data of one or more sectors in the file system, wherein the one or more sectors are operated by the concurrent operations.

15. The system of claim 13, wherein the processor further to obtain addresses of one or more sectors being operated by each concurrent operation from the location data.

16. The system of claim 13, wherein the processor further to perform each concurrent operation on a fragment of the file system as indicated by the location data.

20 17. The system of claim 13, wherein the processor further to delete the location data associated with a concurrent operation on a fragment of the file system, in response to determining that the concurrent operation on the fragment is completed.

25 18. The system of claim 17, wherein the processor further to continue the concurrent operation on one or more fragments of the file system, in response to

determining that the data structure comprises location data associated with the concurrent operation on the one or more fragments after the deleting.

19. The system of claim 13, wherein the processor further to removing the location data on a concurrent operation from the data structure, in response to
5 determining that the concurrent operation is completed.

20. The system of claim 13, wherein in response that a concurrent operation on a fragment of the file system replaces existing location data on one or more sectors of the file system, the processor further to update location data associated with one or more other concurrent operations on the same one or more sectors
10 according to the replacement.

21. The system of claim 20, wherein in response to determining that the concurrent operation replaces the existing location data by new location data, the processor further to update the location data associated with the one or more other concurrent operations with the new location data.

15 22. The system of claim 13, wherein in response that a write operation on a fragment of the file system replaces one or more exiting sector locations of the file system by one or more new sector locations, the processor further to update the same one or more existing sector locations in location data on one or more other concurrent operations with the one or more new sector locations.

20 23. The system of claim 13, wherein in response to determining that one or more high priority operations are detected during a concurrent operation, the processor further to perform the one or more high priority operations after completing the concurrent operation on a fragment of the file system as identified by the location data.

24. A machine readable medium comprising a plurality of instructions that in response to being executed result in a computing device

storing a track table, wherein each entry of the track table comprises one or more sector locations of a file system of a non-volatile memory being operated by
5 one or more concurrent operations, and

performing the one or more concurrent operations on the one or more sector locations.

25. The machine readable medium of claim 24 further comprising a plurality of instructions that in response to being executed result in a computing device

10 initializing the track table to further include information to identify at least one of files and directories in the file system being operated by one or more of the concurrent operations.

26. The machine readable medium of claim 24 further comprising a plurality of instructions that in response to being executed result in a computing device

15 performing each concurrent operation on a corresponding fragment of the file system as indicated by one or more sector locations associated with the concurrent operation.

27. The machine readable medium of claim 24 further comprising a plurality of instructions that in response to being executed result in a computing device

20 deleting from the track table one or more sector locations associated with a concurrent operation on a fragment of the file system, in response to determining that the concurrent operation on the fragment is completed.

28. The machine readable medium of claim 27 further comprising a plurality of instructions that in response to being executed result in a computing device

in response to determining that the track table comprises one or more sector locations associated with the concurrent operation after the deleting, continuing the concurrent operation on a fragment identified by the one or more sector locations.

29. The machine readable medium of claim 24 further comprising a plurality
5 of instructions that in response to being executed result in a computing device
removing from the track table an entry associated with a concurrent
operation in response to determining that the concurrent operation is completed.

30. The machine readable medium of claim 24 further comprising a plurality
of instructions that in response to being executed result in a computing device
10 in response to determining that a concurrent operation moves a sector
location to a new sector location, updating one or more entries of the track table that
relate to the sector location with the new sector location.

31. The machine readable medium of claim 24 further comprising a plurality
of instructions that in response to being executed result in a computing device
15 in response to determining that a concurrent operation on a fragment
replaces a sequence table by a new sequence table, updating one or more entries
of the track table that comprise sector locations of the one or more sequence tables
with sector locations of the one or more new sequence tables.